



City of Santa Barbara
Fire Prevention Bureau

Spray Finishing Operations
2010 California Fire Code, Chapter 15 Flammable Finishes

Definition of Spray Booth:

A mechanically ventilated appliance of varying dimensions and construction provided to enclose or accommodate a spraying operation and to confine and limit the escape of spray vapor and residue and to exhaust it safely. (CFC, Section 1502)

Definition of Spray Room:

A room designed to accommodate spraying operations constructed in accordance with the California Building Code and separated from the remainder of the building by a minimum 1-hour fire barrier.

SPRAY BOOTHS

When Required:

- All spraying operations performed inside of a building shall be conducted in an approved spray booth, spraying area or spraying room approved for such use.
- When the application of flammable or combustible paint, varnish lacquer, stain or other flammable or combustible liquid applied as spray by compressed air, “airless” or “hydraulic atomization,” or by steam or electrostatic methods or by any other means in continuous or intermittent processes.
- When spraying operations are conducted in areas which in their entirety exceed nine (9) square feet and is of a continuous nature.

Construction Requirements:

- Noncombustible construction, equal to No. 18 gauge steel.
- Area not to exceed 1500 square feet or 10 percent of the basic area permitted per CBC.
- Interior surfaces shall be smooth and continuous to prevent pocketing of residue.
- Floor shall be of noncombustible material or covered with noncombustible, non-sparking material.
- Baffle plates, if installed shall be of a noncombustible material readily removable or accessible to facilitate cleaning. Such plates shall not be installed in the exhaust ducts.
- Deflectors, a spray booth having a frontal area of more than nine (9) square feet which is not equipped with doors shall have a metal deflector or fire curtain not less than 4 1/2 inches deep installed at the upper edge of the booth over the booth opening.
- Separation of spray booths from other operations shall not be less than 3 feet, or a wall or partition shall be provided as required.
- A clear space of not less than 3 feet shall be kept free of storage or combustible materials. All portions of a spray booth shall be readily available for cleaning.
- Illumination shall be done through heat-treated or hammered wire glass. Fixed lighting units shall only be used as a source of illumination.
- Exit doors from pre-manufactured paint spray booths may be 2 feet 6 inches by 6 feet 8 inches.

Electrical Requirements:

- No open flame or spark-producing equipment shall be permitted in any spraying area, nor within 20 feet thereof, unless separated by an approved partition.
- No space-heating appliances, steam pipes or hot surfaces shall be located in a spraying area.
- No electrical equipment shall be permitted in any spraying area unless specifically approved.
- Wiring to be in rigid conduit or boxes or fittings containing no taps, splices or terminal connections.
- Wiring located in a spraying area, but not subject to deposits of combustible residues shall be considered a Class 1, Division 1 hazard location per the Electrical Code.
- Wiring located outside of but within 20 feet of any spraying area shall be considered a Class 1, Division 2 hazard location per the Electrical Code.
- Electric lamps outside of but within 20 feet of any spraying area shall be completely enclosed and protected from physical damage.
- Portable electric lamps are not permitted unless approved for cleaning or repairing operations.
- All metal parts of spray booths shall be properly grounded in accordance with the Electrical Code.

Ventilation Requirements:

- Mechanical ventilation shall be provided.
- Electrical equipment shall be interlocked with the ventilation system.
- Electrical motors for exhaust fans shall not be placed inside booths or ducts.
- Fan elements shall be of nonferrous or non-sparking material.
- No fan belts permitted inside spraying area unless tightly enclosed.
- Discharge points for exhaust ducts shall not be less than 6 feet from combustible construction nor 25 feet from openings.
- Exhaust ducts shall have a minimum clearance of 18 inches from unprotected material.
- Recirculation of exhaust air is prohibited.
- Air intake ducts shall pick up flammable vapors within 6 inches of floor.
- Air velocity shall not be less than 100 lineal feet per minute.
- Exhaust duct systems shall not be installed at an angle exceeding 45 degrees measured from the center line of the duct.
- Cleanout openings shall be provided at intervals.

Storage and Handling of Flammable or Combustible Liquids:

- Amounts exceeding 10 gallons shall be stored in approved cabinets.
- Open or glass containers shall not be used.
- Containers supplying spray nozzles shall be of closed type or provided with metal covers kept closed.
- Containers supplying spray nozzles by gravity flow shall not exceed 10 gallon capacity.
- Containers or piping with hose or flexible connection shall be provided with a shut-off valve at the connection.
- Positive displacement pumps shall have a relief valve.
- Transfers of flammable mixtures between containers shall be bonded and grounded.
- Piping systems for Class I or II liquids shall be permanently grounded.

Fire Protection Equipment:

- All spray booths or spray rooms shall be protected by an approved automatic fire-extinguishing system. Plans must be submitted to the Building Department at 630 Garden Street for Fire Department review and approval prior to installation.
- Portable fire extinguishers with a minimum rating of 40BC shall be provided near all spraying areas.
- When sprinklers are installed and a dedicated water source is not available, water may be furnished from the domestic supply provided the domestic supply can meet the design criteria for **Extra Hazard (Group 2) occupancies, as defined in NFPA 13**. Pipe must be one inch minimum and may be copper or galvanized steel. The protection area per sprinkler shall not exceed 90 square feet.
- Sprinkler heads shall be cleaned and protected against residue. If covered, Polyethylene or cellophane bags having thickness of 0.003 inch (0.076mm) or less shall be used. Coverings shall be replaced periodically.

Drying Apparatus:

- Drying or baking units having an open flame or which are capable of producing sparks shall not be installed in flammable vapor areas.
- When a portable infrared drying apparatus is used, electrical wiring and portable infrared drying equipment shall comply with the California Electrical Code and installed in accordance with the conditions of Section 1504.6.1.2.2.

General Housekeeping:

- Approved metal waste cans shall be provided for rags and waste and shall be properly disposed of at least once daily.
- Tools for cleaning shall be of non-sparking material.
- Spraying materials shall not be incompatible.
- Spraying areas shall be kept free from the accumulation of residues.
- Cleaning solvents shall be restricted to Class I and Class II liquids.